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disturbances as those of the West Indies are discussed, and the view is expressed 'that a subsidence of the floor of the Caribbean Basin, causing displacements of equilibrium and forcing molten and other material to the surface, was the inciting cause of the Antillean eruption' (p. 50). The later paragraphs are devoted to an inquiry in regard to the source of volcanic steam, and the two theories, the penetration of sea water, and of land water, are discussed. The author concludes with a statement favoring the theory that hydrated rocks and the magma of the earth's interior supply the water from which the steam of volcanoes is derived. Twenty-three excellent half-tone plates of the tower of Pelée, eruptions, etc., complete the volume.

ERNEST HOWE.

THE BELGIAN ANTARCTIC EXPEDITION.

Resultats du voyage du S. Y. 'Belgica' en 1897-98-99, sous le commandement de A. de Gerlache de Gomery. Rapports scientifique: Zoologie. Organogénie des Pinnipèdes. I., Les extrémités, par H. LEBOUQC. December, 1904. Pp. 20, pl. I.-II. Botanique. Champignons par Mmes. E. BOMMER et M. ROUSSEAU. April, 1905. Pp. 15, pl. I.-V.

Two more numbers of the fine series of Antarctic reports from the Belgian Expedition have been received. In the first we have a discussion of the nepionic stages of the development of the extremities in the Antarctic seals, *Lobodon carcinophaga* and *Leptonychotes weddelli*, deduced from a series of unborn young. Of these twelve belonged to *Lobodon* and four to *Leptonychotes*. None of the specimens was embryonic, ranging in length from fifteen centimeters upward. Nevertheless, a study of the progressive development or gradual reduction of the phalanges, nails and hair in such a well-preserved series is far from uninteresting, and this is what M. Leboucq offers, together with some comparisons with known data relating to other seals and some cetaceans.

The fungi collected by the *Belgica*, with one exception, were obtained in Tierra del Fuego, where ten species and forms new to science

were obtained. The Antarctic form was found among the culms of the sole Antarctic grass, *Aira antarctica*, in the state of mycelium, which offers analogies with that of *Collybia racemosa*, and it is possible that it belongs to an *Agaric* related to that species. It comes from Danco Land. The Fuegian forms number fifteen and are fully illustrated by admirably executed plates.

W. H. DALL.

SCIENTIFIC JOURNALS AND ARTICLES.

THE December number (volume 12, number 3) of the *Bulletin of the American Mathematical Society* contains the following articles: Report of the October Meeting of the American Mathematical Society, by F. N. Cole; Report of the September Meeting of the San Francisco Section, by G. A. Miller; 'Note on Loxodromes,' by C. A. Noble; 'Stolz and Gmeiner's Function Theory' (Review of Stolz and Gmeiner's *Einleitung in die Functionentheorie*, Abteilung I.), by Oswald Veblen; 'Cesàro-Kowalewski's Algebraic Analysis and Infinitesimal Calculus' (Review of Cesàro's *Elementares Lehrbuch der Algebraischen Analysis und der Infinitesimalrechnung*), by C. L. E. Moore; Shorter Notices; Notes; New Publications.

The January number of the *Bulletin* contains: 'On a Familiar Theorem of the Theory of Functions,' by Edmund Landau; 'Rational Plane Curves Related to Riemann Transformations,' by H. S. White; 'On Lamé's Six Equations Connected with Triply Orthogonal Systems of Surfaces,' by J. E. Wright; 'Certain Surfaces Admitting of Continuous Deformation with Preservation of Conjugate Lines,' by Burke Smith; 'The New Calculus of Variations,' by E. R. Hedrick; 'Granville's Differential and Integral Calculus' (Review), by E. B. Van Vleck; 'The Foundations of Science' (Review of Poincaré's *Science et Hypothèse*), by E. B. Wilson; 'La Mécanique Statistique' (Review of Gibb's *Statistical Mechanics*), by Jacques Hadamard; Notes; New Publications.

The American Naturalist for December contains the following articles: 'Ecology of

the Willow Cone Gall,' by Roy L. Heindel, showing the importance of galls to the insect world; 'Forest Centers of Eastern North America,' by Edgar N. Transeau, the term being used to designate the distribution of trees about the region where they attain their best development; 'Mandibular and Pharyngeal Muscles of *Acanthias* and *Raia*,' by G. E. Marion, who finds that from the peculiar shape of the head the ray possesses a few muscles not found in the dogfish.

Bird-Lore for November-December is a thick number, having for its general articles 'The Structure of Wings,' by W. M. Wheeler; 'The Growth of a Young Bird,' by E. R. Warren, illustrated with pictures of birds at various stages of growth; 'Some Early American Ornithologists—Alexander Wilson,' by Witmer Stone; 'Blue Jays at Home,' by Wilbur F. Smith; 'The Story of a Tame Bob-White,' by J. M. Graham, and 'The Feeding Habits of the Northern Phalarope,' by Frank M. Chapman. W. W. Cooke contributes the thirteenth of a series of papers on 'The Migration of Warblers' and William Dutcher the seventeenth Educational Leaflet of the Audubon Societies, devoted to the American goldfinch and accompanied by a colored plate. The Annual Report of the National Association of Audubon Societies for 1905 covers fifty pages and is encouraging reading, showing steady increase and interest in the matter of bird protection.

The Museums Journal of Great Britain for November has articles on 'The Formation of Local Illustrative Collections in Museums,' by John MacLauchan, showing how much has been done in Dundee and what may be done elsewhere; 'The Exhibition of Fresh Wild Flowers in Museums,' by G. A. Dunlop. The notes, as usual, form an important part of the number.

The Journal of Nervous and Mental Disease for December opens with a discussion of the effect of diet upon epilepsy, by Dr. A. J. Rosanoff, including the report of some experiments, from which the author concludes that the organism of the epileptic can not take care of proteid material as it is taken

care of by the healthy organism, and that consequently proteids should be replaced in his diet by fats and carbohydrates as far as is consistent with the general health. Dr. M. A. Bliss follows with a report of twenty-four cases of multiple neuritis of obscure origin observed by him among the patients of an insane asylum. Dr. Hecht's elaborate paper on dementia præcox, begun in the previous number, is concluded in this issue.

SOCIETIES AND ACADEMIES.

THE GEOLOGICAL SOCIETY OF WASHINGTON.

At the 171st meeting on November 22 the following papers were presented:

Artificial Wollastonite and Pseudo-wollastonite: Mr. FRED E. WRIGHT.

Mr. Wright described the results of an extended chemical, physical and mineralogical study of the mineral wollastonite by Drs. E. T. Allen, W. P. White and himself, of the U. S. Geological Survey and Carnegie Institution. In the course of their investigation they not only produced artificial wollastonite crystals identical with the natural mineral, but also observed interesting facts bearing on the conditions of its formation which are of geologic significance. It was found that on heating both natural and artificial wollastonite crystals up to the melting point, 1,512° C., an inversion in the solid state took place at 1,180° C. to a second form called pseudo-wollastonite which has never been found in nature and which differs materially from the original substance in optical properties. On cooling, the second form does not revert to wollastonite under ordinary conditions and can only be induced to do so in the presence of some flux such as calcium vanadate. The importance of the inversion temperature (1,180°) as a definite point which is uninfluenced by surrounding magmatic conditions except pressure, was emphasized, and the inference drawn that since pseudo-wollastonite does not occur in nature while wollastonite is found usually in limestone contact aureoles of eruptive rocks where pneumatolytic solutions have been active and all minerals formed contemporaneously, the inversion temperature places a prob-